PATENT COOPERATION Th_ATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

Tn·

Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C.20231 ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year)
18 October 2000 (18.10.00)

in its capacity as elected Office

PCT/US00/02281

International filing date (day/month/year)
28 January 2000 (28.01.00)

International application No.

Priority date (day/month/year)
29 January 1999 (29.01.99)

Applicant's or agent's file reference

UA335PCT

Applicant

HARRIS, Frank, W. et al

1.	The designated Office is hereby notified of its election made:
	X in the demand filed with the International Preliminary Examining Authority on:
	22 August 2000 (22.08.00)
	in a notice effecting later election filed with the International Bureau on:
2.	The election X was was not
	made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).
!	

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland

Authorized officer

Kiwa Mpay

Telephone No.: (41-22) 338.83.38

Facsimile No.: (41-22) 740.14.35

PATENT COOPERATION TREATY

From the

To: RAY L. WEBER

& WEBER

INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

RENNER, KENNER, GREIVE, BOBAK, TAYLOR

1610 FIRST NATIONAL TOWER

DEC 15 2000

PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing (day/month/year)

11 DEC 2000

Applicant's or agent's file reference

International application No.

AKRON OH 44308-1456

UA335PCT

PCT/US00/02281

IMPORTANT NOTIFICATION

International filing date (day/month/year)

28 JANUARY 2000

Priority Date (day/month/year)

29 JANUARY 1999

Applicant

THE UNIVERSITY OF AKRON

- 1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
- A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
- 3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

EDDIE LEE

Telephone No.

(703) 308-1690

Rene Proton

Form PCT/IPEA/416 (July 1992)*

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International				
UA335PCT		Preliminary Examination Report (Form PCT/IPEA/416)				
International application No.	International filing date (day/m	onth/year) Priority date (day/month/year)				
PCT/US00/02281	28 JANUARY 2000	29 JANUARY 1999				
International Patent Classification (IPC) or national classification and IPC IPC(7): H01L 23/58, 21/31 and US Cl.: 257/643; 438/780						
Applicant						
THE UNIVERSITY OF AKRON	THE UNIVERSITY OF AKRON					
This international preliminary Authority and is transmitted	examination report has been p to the applicant according to	repared by this International Preliminary Examining Article 36.				
2. This REPORT consists of a t	total of <u>3</u> sheets.					
been amended and are the	panied by ANNEXES, i.e., shee to basis for this report and/or she tion 607 of the Administrative I	ts of the description, claims and/or drawings which have bets containing rectifications made before this Authority.				
These annexes consist of a tot	al of $\underline{\mathcal{U}}$ sheets.					
3. This report contains indications	s relating to the following ite	ms:				
I X Basis of the report	t					
II Priority						
III Non-establishment	of report with regard to nov	elty, inventive step or industrial applicability				
IV Lack of unity of i	nvention					
V X Reasoned statemen citations and explan	t under Article 35(2) with regardations supporting such statement	ard to novelty, inventive step or industrial applicability;				
VI Certain documents	cited					
VII Certain defects in the	ne international application					
VIII Certain observations	on the international application	on .				
	-					
Date of submission of the demand	Date of	of completion of this report				
22 AUGUST 2000	17	NOVEMBER 2000				
Name and mailing address of the IPEA/US	- / 144101	ized officer				
Commissioner of Patents and Trademan		DDIE LEE				
Washington, D.C. 20231						
Facsimile No. (703) 305-3230	Teleph	one No. (703) 308-1690 Ten e 10 0600				

Form PCT/IPEA/409 (cover sheet) (July 1998)★



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/02281

1. R	asis of	the report		
1. Wid	h regard (to the elements of the interna	ational application:*	
х		ernational application as		
		scription:		
X		1-42		on originally filed
	pages	NONE		
			, filed with the letter of	, illed with the demand
	pages		, theu with the letter of	
x	the cla	ims:		
لنث		43-51		, as originally filed
			, as amended (together with any	
	pages	NONE		•
	pages	NONE	, filed with the letter of	-
X		awings:		
		NONE	<u> </u>	, as originally filed
		NONE		, filed with the demand
	pages	NONE	, filed with the letter of	
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X	tne sec	quence listing part of the d		as sulsingly. 61.3
	pages	NONE	, filed with the letter of	, med with the demand
	pages	110116	, thed with the letter of	
	the lan	guage of a translation fur guage of publication of t guage of the translation furni	hed to this Authority in the following language rnished for the purposes of international search the international application (under Rule 48.3(b) shed for the purposes of international preliminary exar	(under Rule 23.1(b)).
			or amino acid sequence disclosed in the internation dout on the basis of the sequence listing:	onal application, the international
	contai	ned in the international a	pplication in printed form.	
	filed to	ogether with the internati	onal application in computer readable form.	
	furnish	ned subsequently to this A	Authority in written form.	
	furnisl	ned subsequently to this A	Authority in computer readable form.	
	The st interna	atement that the subseque ational application as filed	ently furnished written sequence listing does not a has been furnished.	go beyond the disclosure in the
	The state	atement that the information urnished.	n recorded in computer readable form is identical to	o the writen sequence listing has
4. X] The a	mendments have resulted	in the cancellation of:	
	X	the description, pages	NONE	
		the claims, Nos.	NONE	
		the drawings, sheets /fig	NONE	
5.	This r	eport has been drawn as if	(some of) the amendments had not been made, since	te they have been considered to go
, ,	beyou	nd the disclosure as filed, as	s indicated in the Supplemental Box (Rule 70.2(c)).	**
in	placemen this repo 1 70.17).	rt as "originally filed" and	nished to the receiving Office in response to an invitated are not annexed to this report since they do not a	contain amendments (Rules 70.16
**An	y replac	ement sheet containing suc	ch amendments must be referred to under item 1 an	nd annexed to this report.



International application No.
PCT/US00/02281

Claims NONE	statement				
Inventive Step (IS) Claims Claims Claims Claims Claims Industrial Applicability (IA) Claims NoNE Claims Claims Claims NoNE Claims Claims Claims NoNE Claims Claims Claims NoNE Claims NoNE Claims Claims Claims NoNE Claims Claims Claims NoNE Claims Claims NoNE Claims Claims NoNE Claims Claims Claims NoNE Claims Claims Claims NoNE Claims Clai	Novelty (N)	Claims	1-25		YE
Industrial Applicability (IA) Claims Claims 1-25 Claims NONE None Citations and explanations (Rule 70.7) Claims 1-25 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest forming or using an insulating layer of the claimed polymerization product over an integrated circuit or over a conductive component. NONE NEW CITATIONS					NO
Industrial Applicability (IA) Claims Claims 1-25 Claims NONE None Citations and explanations (Rule 70.7) Claims 1-25 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest forming or using an insulating layer of the claimed polymerization product over an integrated circuit or over a conductive component. NEW CITATIONS	Inventive Sten (IS)	Claims	1-25		VE
Claims NONE None No. Claims None No. Claims None No. Claims 1-25 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest forming or using an insulating layer of the claimed polymerization product over an integrated circuit or over a conductive component. NONE NEW CITATIONS	inventive step (13)		•		NC
Claims NONE None (Rule 70.7) Claims 1-25 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest forming or using an insulating layer of the claimed polymerization product over an integrated circuit or over a conductive component. NEW CITATIONS					
Claims NONE No.	Industrial Applicability (IA)	Claims	1-25		YE
Claims 1-25 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest forming or using an insulating layer of the claimed polymerization product over an integrated circuit or over a conductive component. NEW CITATIONS					NC
	NEW CITATIONS				
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PATENT COOPERATION TR

RECEIVED

From the INTERNATIONAL SEARCHING AUTHORITY

To: WEBER, RAY L. RENNER, KENNER, GREIVE, BOBAK, TAYLOR &

MAY 12 2000

PGENER, KENNER, GREIVE, BOBAK, TAYLOR & WEBER

1610 FIRST NATIONAL TOWER AKRON, OHIO 44308-1456	NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION (PCT Rule 44.1)
	Date of Mailing (day/month/year) 0 9 MAY 2000
Applicant's or agent's file reference UA335PCT	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US00/02281	International filing date (day/month/year) 28 JANUARY 2000
Applicant THE UNIVERSITY OF AKRON	
Filing of amendments and statement under Artic The applicant is entitled, if he so wishes, to amend When? The time limit for filing such amend international search report; however, for 34, chemin des Colomb 1211 Geneva 20, Switze Facsimile No.: (41-22) For more detailed instructions, see the notes of Article 17(2)(a) to that effect is transmitted herewith Article 17(2)(a) to that effect is transmitted herewith the protest together with the decision thereof applicant's request to forward the texts of be no decision has been made yet on the protest. 4. Further action(s): The applicant is reminded of the first the applicant wishes to avoid or postpone publication priority claim, must reach the International Bureau completion of the technical preparations for internat. Within 19 months from the priority date, a demand for wishes to postpone the entry into the national phase.	ments is normally 2 months from the date of transmittal of the r more details, see the notes on the accompanying sheet. WIPO ettes erland 740.14.35 In the accompanying sheet. In additional fee(s) under Rule 40.2, the applicant is notified that: In has been transmitted to the International Bureau together with the both the protest and the decision thereon to the designated Offices. In applicant will be notified as soon as a decision is made. Following: In ational application will be published by the International Bureau. If on, a notice of withdrawal of the international application, or of the as provided in rules 90 bis 1 and 90 bis 3, respectively, before the ional publication. In international preliminary examination must be filed if the applicant a until 30 months from the priority date (in some Offices even later). In the demand or in a later election within 19 months from the priority in the demand or in a later election within 19 months from the priority
No and mailing address of the ISA/IIS	Authorized officer

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks

Box PCT Washington, D.C. 20231

Facsimile No. (703) 305-3230

N. DREW RICHARDS

Telephone No.

(703) 306

(See notes on accompanying sheet)

Form PCT/ISA/220 (July 1998)*

From the INTERNATIONAL SEARCHING AUTHORITY **PCT** WEBER, RAY L. RENNER, KENNER, GREIVE, BOBAK, TAYLOR & NOTIFICATION OF TRANSMITTAL OF 1610 FIRST NATIONAL TOWER THE INTERNATIONAL SEARCH REPORT AKRON, OHIO 44308-1456 OR THE DECLARATION (PCT Rule 44.1) **0 9 MAY 2000** Date of Mailing (day/month/year) See paragraphs 1 and 4 below Applicant's or agent's file reference FOR FURTHER ACTION UA335PCT International filing date International application No. (day/month/year) 28 JANUARY 2000 PCT/US00/02281 Applicant THE UNIVERSITY OF AKRON The applicant is hereby notified that the international search report has been established and is transmitted herewith. 1.| X Filing of amendments and statement under Article 19: The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46): The time limit for filing such amendments is normally 2 months from the date of transmittal of the international search report; however, for more details, see the notes on the accompanying sheet. Where? Directly to the International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 For more detailed instructions, see the notes on the accompanying sheet. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith. With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that: the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices. no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made. The applicant is reminded of the following: Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If 4. Further action(s): the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in rules 90 bis 1 and 90 bis 3, respectively, before the completion of the technical preparations for international publication. Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later). Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks

Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

N. DREW RICHARDS

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(See notes on accompanying sheet)

Form PCT/ISA/220 (July 1998)*

(703) 306-59

Telephone No.

S. - # 8

CLASSIFICATION OF SUBJECT MATTER :H01L 23/58, 21/31 IPC(7) US CL :257/643; 438/780 According to International Patent Classification (IPC) or to both national classification and IPC FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) 257/643, 642; 438/780, 781, 623, 99 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) **USPTO APS EAST** search terms: polyimide, aromatic, diamine, dianhydride, fluoro DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages Category* 1, 2, 12, 13, 23 US 5,677,041 A (SMAYLING) 14 October 1997 (14-10-1997), col. Y 3-5, especially col. 4 lines 50-65. US 5,766,740 A (OLSON) 16 June 1998 (16-06-1998), col. 3-4. 1-25 Α US 5,814,894 A (IGARASHI et al.) 29 September 1998 (29-09-1-25 1998), col. 5 and col. 15-16. US 4,499,149 A (BERGER) 12 February 1985 (12-02-1985), col. 9-1-25 Α See patent family annex. Further documents are listed in the continuation of Box C. "T" later document published after the international filing date or priority Special categories of cited documents: date and not in conflict with the application but cited to understand the principle or theory underlying the invention document defining the general state of the art which is not considered to be of particular relevance "A" document of particular relevance; the claimed invention cannot be "X" -Eearlier document published on or after the international filing date considered novel or cannot be considered to involve an inventive step when the document is taken alone document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination special reason (as specified) document referring to an oral disclosure, use, exhibition or other means "O" being obvious to a person skilled in the art document published prior to the international filing date but later than "P" the priority date claimed document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search **0 9** MAY 2000 21 APRIL 2000 Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Authorized officer Box PCT N. DREW RICHARDS Washington, D.C. 20231

(703) 305-3230 Form PCT/ISA/210 (second sheet) (July 1998)*

Facsimile No.

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT.

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference		
UA335PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No.	International filing date (day/n	month/year) Priority date (day/month/year)
PCT/US00/02281	28 JANUARY 2000	29 JANUARY 1999
International Patent Classification (IPC) o IPC(7): H01L 23/58, 21/31 and US Cl.:	r national classification and IPC 257/643; 438/780	C
Applicant THE UNIVERSITY OF AKRON		
2. This REPORT consists of a t This report is also accomp been amended and are the	to the applicant according to total of sheets. panied by ANNEXES, i.e., she basis for this report and/or she ton 607 of the Administrative	ets of the description, claims and/or drawings which have
3. This report contains indications	_	ems:
I X Basis of the report	1	
II Priority		
III Non-establishment	of report with regard to no	velty, inventive step or industrial applicability
IV Lack of unity of in		only, involute step of industrial applicability
V X Reasoned statement		gard to novelty, inventive step or industrial applicability;
VI Certain documents of		
	e international application	
Certain observations	on the international application	on
Date of submission of the demand	Date	of completion of this report
22 AUGUST 2000	17	7 NOVEMBER 2000
Name and mailing address of the IPEA/US		prized officer
Commissioner of Patents and Trademark Box PCT		DDIE LEE
Washington, D.C. 20231 Facsimile No. (703) 305-3230	İ	(1) (1) $=$ i $=$
Facsimile No. (703) 305-3230	Telepi	hone No. (703) 308-1690 Piggs 2 Mindim

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.	
PCT/US00/02281	

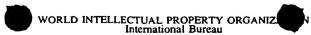
I. I	Basis f	the report			
1. Wit	th regard	to the elements of the inten	national application	m·*	
x		ternational application as			
		escription:	originary in	ou .	
X	1	1-42		•	
		NONE			, as originally filed
				filed with the leave a	, filed with the demand
	F-8-0			, med with the letter o	f
X	the cl	aims:			
	pages	43-51			, as originally filed
	pages	NONE		, as amended (together v	with any statement) under Article 19
	pages	NONE			filed with the demand
	pages	NONE	, filed w	ith the letter of	, mos wan die demand
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لکا		NONE			
		NONE			, as originally filed
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		NONE	=		, as originally filed
	pages	NONE			filed with the demand
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	the lan	guage of publication of	the internation	al application (under Rule	
	or 55.3	guage of the translation furn:).	ished for the pur	poses of international prelimina	ry examination (under Rules 55.2 and/
3. Wit	th regard	d to any nucleotide and/o y examination was carried	or amino acid s d out on the ba	sequence disclosed in the intesting:	ernational application, the international
	contair	ned in the international a	pplication in p	rinted form.	
				on in computer readable for	m.
		ed subsequently to this a			
	furnish	ed subsequently to this	Authority in co	omputer readable form.	
	The sta	atement that the subseque tional application as filed	ntly furnished	written sequence listing doe	s not go beyond the disclosure in the
	The sta				itical to the writen sequence listing has
4. X	The an	nendments have resulted	in the cancell	ation of:	
	X _t	he description, pages	NONE		
	32	he claims, Nos.	NONE		
		he drawings, sheets/fig	NONE		
5.	This re	port has been drawn as if ((some of) the ar	mendments had not been made	e, since they have been considered to go
4/4 6/6	beyond acement	d the disclosure as filed, as sheets which have been furn	indicated in the interest in t	e Supplemental Box (Rule 70.	2(c)).** invitation under Article 14 are referred to not contain amendments (Rules 70.16
		ment sheet containing such	n amendments n	nust be referred to under iten	n 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/02281

statement			
Novelty (N)	CI :	• as:	
Novelly (IV)	Claims Claims	NONE	Y
	Ciainis	NONE	No
Inventive Step (IS)	Claims	1-25	YI
	Claims	NONE	No
Industrial Applicability (IA)	Claims	1-25	YI
	Claims	NONE	NO.





INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7:
H01L 23/58, 21/31

A1

(11) International Publication Number: WO 00/45435

(43) International Publication Date: 3 August 2000 (03.08.00)

US

(21) International Application Number: PCT/US00/02281

(22) International Filing Date: 28 January 2000 (28.01.00)

(30) Priority Data: 60/117,960 29 January 1999 (29.01.99)

(71) Applicant (for all designated States except US): THE UNI-VERSITY OF AKRON [US/US]; 302 E. Buchtel Avenue, Akron, OH 44325 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HARRIS, Frank, W. [US/US]; 1879 Deerwood Drive, Akron, OH 44313 (US). CHENG, Stephen, Z., D. [US/US]; 6123 Independence Drive, Hudson, OH 44236 (US).

(74) Agents: WEBER, Ray, L. et al.; Renner, Kenner, Greive, Bobak, Taylor & Weber, 1610 First National Tower, Akron, OH 44308-1456 (US). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published

With international search report.

(54) Title: POLYIMIDES USED AS MICROELECTRONIC COATINGS

(57) Abstract

The present invention provides an integrated circuit comprising an insulating layer comprising the polymerization product of the aromatic dianhydride 2,2'-bis(3,4-dicarboxphenyl)hexafluoropropane dianhydride (6FDA) or the aromatic diamine 4,4'-diamino-2,2'-bis(trifluoromethyl)biphenyl (PFMB) with fluorine substituent-containing 4,4'-diamino-2,2'-disubstitutedbiphenyls and 2,2'-disubstituted-4,4'5,5'-biphenyltetracarboxylic dianhydrides, respectively. The present invention further provides a method of coating an integrated circuit comprising preparing a polyimide in an organic solvent, applying the polyimide dispersed within the organic solvent to the surface of the integrated circuit forming a thin insulating layer or film on the surface of the circuit; and heating the integrated circuit with the insulating polyimide layer or film disposed thereon to a temperature sufficient to evaporate the organic solvent and to cure the polyimide. The 6FDA-based and PFMB-based polyimide films of the present invention possess low dielectric constants, high coefficients of thermal expansion, excellent thermal stability and excellent solubility in conventional organic solvents.

FOR THE PURPOSES OF INFORMATION ONLY

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СН	Switzerland	KG	Kyrgyzstan	NO	Norway	zw	Zimbabwe
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CZ	Czech Republic	ic	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

International application No. PCT/US00/02281

IPC(7) :	SIFICATION OF SUBJECT MATTER H01L 23/58, 21/31 257/643; 438/780 o International Patent Classification (IPC) or to both na	ational classification and IPC						
B. FIEL								
Minimum de	ocumentation searched (classification system followed	by classification symbols)						
U.S. : 2	257/643, 642; 438/780, 781, 623, 99							
Documentati	ion searched other than minimum documentation to the	extent that such documents are included	in the fields searched					
None								
Electronic d	ata base consulted during the international search (nam	ne of data base and, where practicable, s	search terms used)					
USPTO A search ten	PS EAST ms: polyimide, aromatic, diamine, dianhydride, fluoro							
C. DOC	UMENTS CONSIDERED TO BE RELEVANT							
Category*	Citation of document, with indication, where app	ropriate, of the relevant passages	Relevant to claim No.					
Y	US 5,677,041 A (SMAYLING) 14 Octo 3-5, especially col. 4 lines 50-65.	ober 1997 (14-10-1997), col.	1, 2, 12, 13, 23					
A	US 5,766,740 A (OLSON) 16 June 19	98 (16-06-1998), col. 3-4.	1-25					
A	US 5,814,894 A (IGARASHI et al.) 1998), col. 5 and col. 15-16.	29 September 1998 (29-09-	1-25					
A	US 4,499,149 A (BERGER) 12 Februar 20.	ry 1985 (12-02-1985), col. 9-	1-25					
Furt	her documents are listed in the continuation of Box C.	See patent family annex.						
-A- de	pecial categories of cited documents: ocument defining the general state of the art which is not considered the of particular relevance	"T" later document published after the in- date and not in conflict with the applie principle or theory underlying the in-	cation but cited to understand the					
.E. et	writer document published on or after the international filing date	"X" document of particular relevance; the considered novel or cannot be considered when the document is taken alone						
ci	ocument which may throw doubts on priority claim(s) or which is ned to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the considered to involve an inventive	he claimed invention cannot be a step when the document is					
	ocument referring to an oral disclosure, use, exhibition or other means ocument published prior to the international filing date but later than	combined with one or more other su- being obvious to a person skilled in	ch documents, such combination					
	se priority date claimed	"&" document member of the same pater	ot family					
Date of the	actual completion of the international search	Date of mailing of the international se	arch report					
21 APRI	L 2000	0 9 MAY 2000						
Commissi	mailing address of the ISA/US oner of Patents and Trademarks	Authorized officer	() 1					
Box PCT Washingto	on, D.C. 20231	N. DREW RICHARDS	- Y Same					
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